WILDLIFE HARVEST AND POPULATION STATUS REPORT

NORTHERN BOBWHITE - 2004

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QUAIL ABUNDANCE

Quail roadside surveys were conducted by Conservation Agents during August 1-15. Agents count the number of quail they see while driving 20 M.P.H. along permanent 30-mile routes. These observations provide an *index* of quail abundance, and not an actual estimate of quail across the landscape. The long-term trend of the index, however, relates fairly well to other indices of quail abundance (e.g., North American Breeding Bird Survey, Missouri quail harvest estimates). The Agents' routes are almost entirely through private land, so the quail index is a reflection of conditions on Missouri's agricultural and private recreational lands.

Agents surveyed 110 of Missouri's 114 counties. Several metropolitan counties (Jackson, St. Louis and St. Charles) have not been surveyed for many years, and in 2003 the Clay County route was permanently deleted because urban development and high vehicle traffic rendered the route unsafe to drive at the specified 20 M.P.H.

Quail slipped this year and fell back from last year's moderate rebound and landed at 3.62 quail per route, just 5% above the record low observed in 2001. The 2004 index is 7% below the count for 2003, and 56% below the long-term average (8.15, 1983-2003) (Table 1). The mean statewide brood count of 0.20 per 30-mile route is 29% below the 2003 index of 0.28, and 64% lower than the long-term average (0.55, 1983-2003) (Table 1).

Regional average total quail counts were highest (5 quail per route) across northern Missouri, moderate (2-3 quail per route) in the Western Prairie, Western Ozark Border, and Ozark Plateau regions, and lowest (<1.3 quail) in the Mississippi Lowland and Northern & Eastern Ozark Border regions (Table 1, Figures 1 and 2).

In addition to surveying fixed routes, 108 of the conservation agents provided their perception of quail abundance in each county. Their impressions are based on observations of quail over the entire county during May-July, observations of farmers, etc. In this evaluation, no counties were judged as excellent, 10 counties were judged as good, 50 counties were judged as fair, and 48 counties were judged to have poor quail populations. On a regional basis, the number of counties rated as good was 8 in the north, and 1 each in the Western Prairie and Northern and Eastern Ozark Borger regions.

Prospects for the 2004 hunting season are fair, with abundance being highest across north Missouri. Compared to last season, abundance indices point to improved hunting in the Ozark Plateau region, worse conditions in the Northwestern Prairie, Mississippi Lowland and Northern & Eastern Ozark Border regions, and little change in the remainder of the state. Because nesting

conditions continued to be good through August, the month of a normal second peak in hatching, there might be a boost in the population from late-season broods.

The population decline this year might be caused by an over-abundance of rain, and subsequent potential for reduced nesting success. For example, statewide rainfall in May was well above average, and concentrated in the northwest where 7-9 inches were common, and Nodaway and Linn counties received >10 inches (http://agebb.missouri.edu/weather/).

The overall continued dearth of quail reflects Missouri's widespread poor habitat. The list of problems is long and includes over-grazed pastures, overly thick stands of grass in old fields and Conservation Reserve Program fields, natural replacement of woody thickets by large canopied trees, replacement of woody draws by grass waterways, removal of woody cover in crop fields and along roadsides, red cedars filling areas once occupied by grasses and weeds, monocultures of crops, grains and forages, etc. There are programs to remedy these problems, including the MDC quail plan (http://www.conservation.state.mo.us/landown/wild/quail/), the Northern Bobwhite Conservation Initiative (http://www.qu.org/seqsg/nbci/nbci.cfm), mid-contract management in the USDA Conservation Reserve Program (CRP), upland buffers in the CRP (http://www.qu.org/index.cfm), Quail Unlimited and Pheasants Forever.

2003 HUNTING SEASON

MDC collects harvest information from a post-season mail survey of a random sample of Missouri small game permit holders. The estimated number of licensed hunters that hunted quail during the 2003 season was 41,497 (Figure 3), a 5% increase over the figure for 2002, but still 63% below the long-term (1967-2002) average of 111,960 hunters. The harvest of 426,590 was 14% greater than in 2002, but still 76% below the long-term average (1967-2002) of 1,817,395.

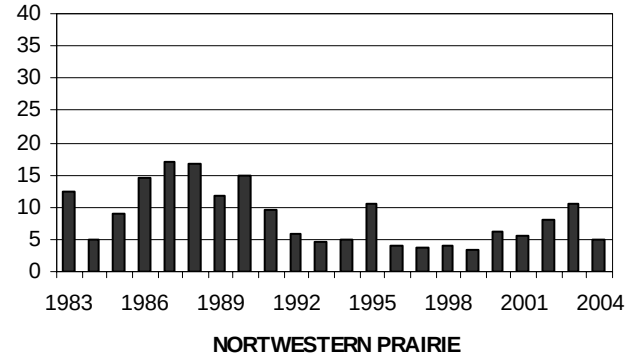
Hunting success was fair, with the average number of quail bagged per day of hunting of 1.7 being 18% greater than in 2002, but still 26% below the long-term (1967-2002) average of 2.3. Hunting success was relatively high (1.9-2.0 quail bagged/day) in the Western Ozark Border, Northeastern Riverbreaks and Northern Riverbreaks zoogeographic regions, moderate (1.5-1.7 bagged/day) in the Northwestern Prairie, Western Prairie, Northern & Eastern Ozark Border, and Mississippi Lowland regions, and lowest (1.4 bagged/day) in the Ozark Plateau region.

Although quail harvest and hunter numbers have reached alarmingly low numbers, hunting success has not declined as dramatically. Over 1967-2003, the average daily bag trend has declined 1.3% per year, whereas the harvest trend has declined 2.6% per year. Quail hunting is still a viable activity for remaining enthusiasts. Moreover, the sport still is a major recreational activity with 246,249 days spent in the field in the 2003 season. However, this is fewest days afield since the survey began in 1967.

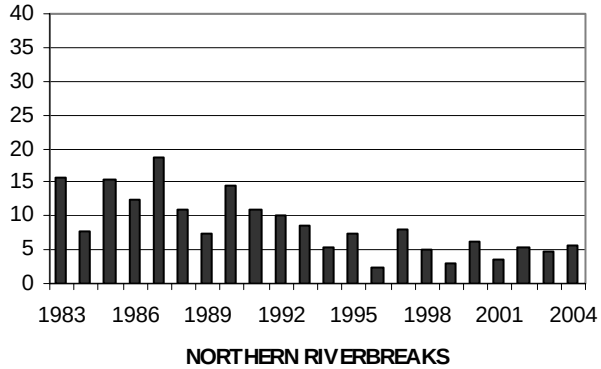
TABLE 1. Mean number of individual quail and broods per route observed by Conservation Agents along 110, 30-mile routes during 1-15 August, 2004.

Zoogeographic Region	Routes	Total Quail			Broods		
		2004	2003	1983-2003 Average	2004	2003	1983-2003 Average
N. W. Prairie	11	5.00	10.54	8.53	0.36	0.91	0.61
N. Riverbreaks	11	5.54	4.18	8.58	0.27	0.27	0.57
N. E. Riverbreaks	20	5.80	6.74	10.44	0.20	0.47	0.68
W. Prairie	12	3.42	3.50	17.71	0.17	0.17	1.23
W. Ozark Border	13	2.85	3.23	7.66	0.15	0.23	0.52
Ozark Plateau	24	3.04	0.54	3.05	0.25	0.04	0.21
N. & E. Ozark Border	12	0.50	1.33	2.99	0.00	0.08	0.22
Mississippi Lowland	7	1.29	3.14	6.50	0.14	0.29	0.57
STATEWIDE	**110**	**3.62**	**3.90**	**8.15**	**0.20**	**0.28**	**0.55**

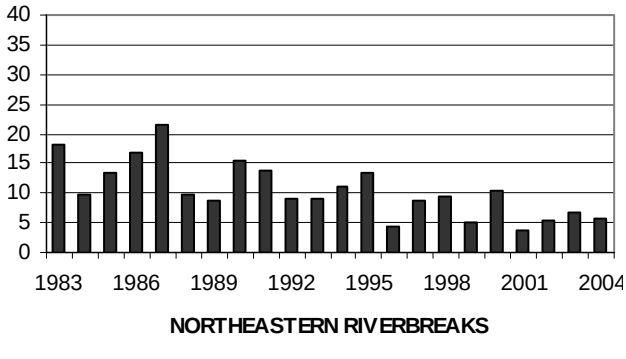
FIGURE 1. Zoogeographic regions of Missouri.



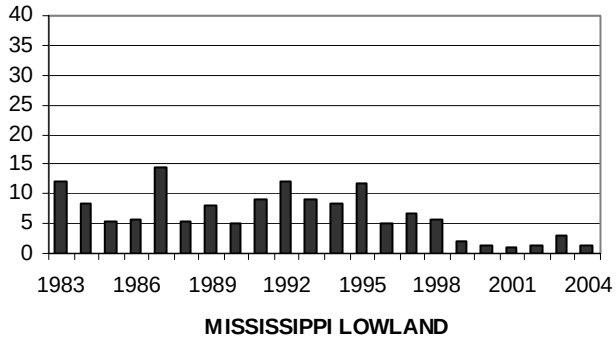
NORTWESTERN PRAIRIE



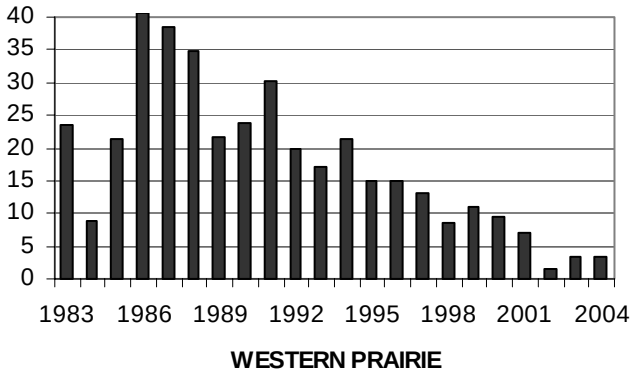
NORTHERN RIVERBREAKS



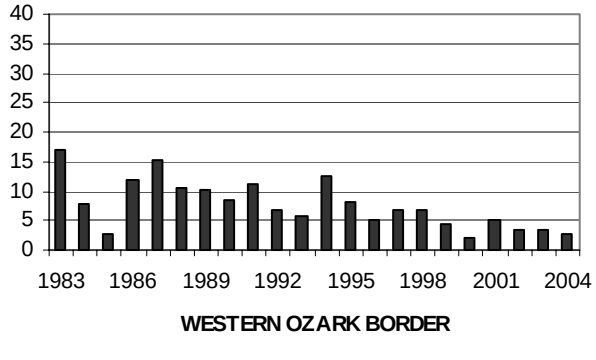
NORTHEASTERN RIVERBREAKS



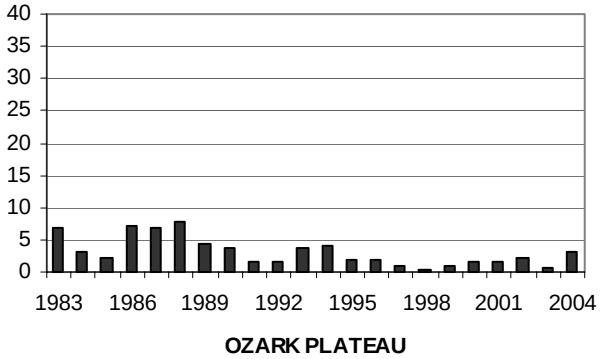
MISSISSIPPI LOWLAND



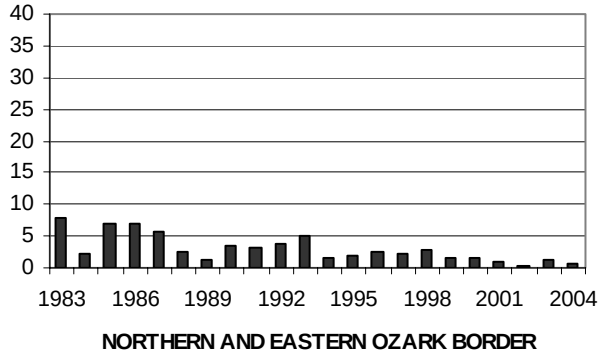
WESTERN PRAIRIE



WESTERN OZARK BORDER



OZARK PLATEAU



NORTHERN AND EASTERN OZARK BORDER

FIGURE 2. Mean quail per 30-mile route, by zoogeographic region, 1983 – 2004.

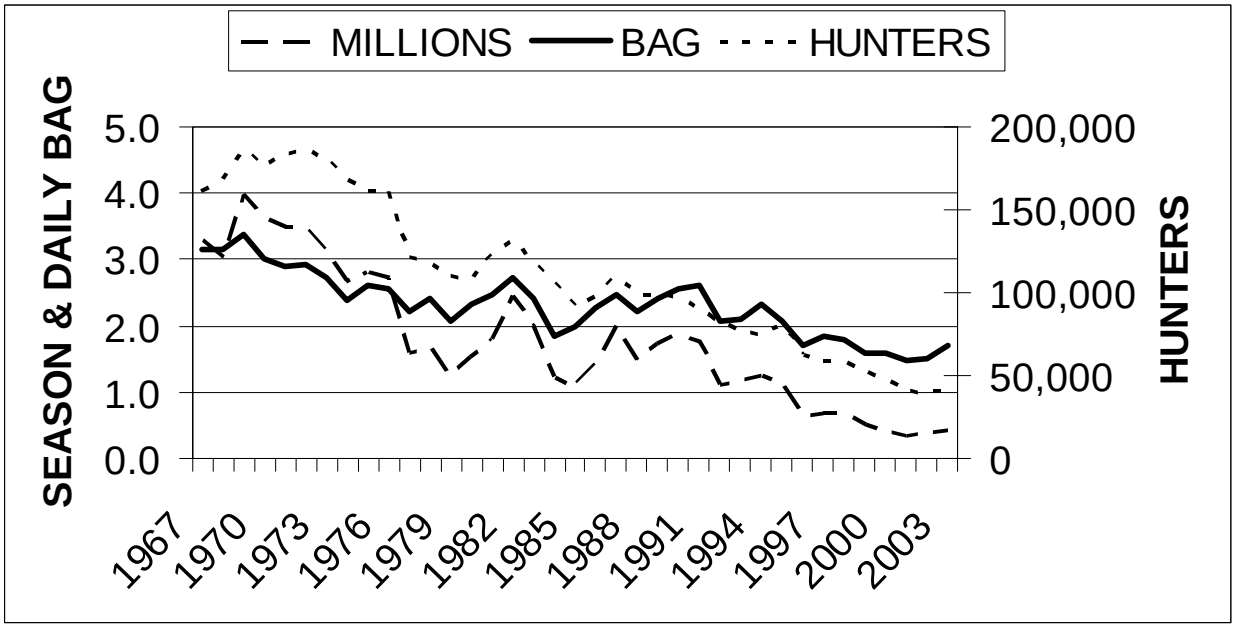


FIGURE 3. Missouri quail hunting trends during 1967 – 2003. Hunting season bag in millions and daily bag (a few birds per day) are combined on left axis. For example, during 2003, 41,497 hunters killed 0.4 million quail (426,590), and the average kill per day was 1.7.